

=== [1] Bootstrap Analysis - Parameter Estimation ===

Method: Resampling from original dataset (n = 70) with replacement,
1000 iterations

Estimated Weibull parameters:

- Beta (shape):
- 95% CI : [2.06, 3.19]
- Mean : 2.51
- Eta (scale):
- 95% CI : [23339.68, 28438.59]
- Mean : 25796.20

=== [2] Simulation - Lifetime Prediction ===

Method: Simulated 10,000 failure times from Weibull(beta=2.51,
eta=25796.20)

Predicted lifecycle percentiles:

- B10 (10% fail) : 10743.71
- B50 (median) : 22260.73
- B95 (95% fail) : 40183.80
- MTTF (Average) : 22954.29

=== [3] Reliability Estimation at 10000 Cycles ===

Method: Bootstrap reliability curve using 1000 resampled datasets

Estimated reliability at cycle = 10000:

- Median reliability : 0.908
- 95% Confidence Interval : [0.863, 0.951]

=== [4] Kolmogorov-Smirnov Test ===

KS Statistic (D): 0.0789

P-value: 0.7495

Conclusion: Simulated and actual data are likely from the same
distribution ($p > 0.05$).











